

31761 119715886

84-0-55

Canada. Statistics.  
Vital Statistics.  
1946.



N. Doc  
Can  
S

Canada. Statistics, Dominion Bureau of

Government  
Publications

( CANADA )

84-D-55

VITAL STATISTICS  
ANALYTICAL REPORT NO. 2

RECORD LINKAGE  
(Revised Edition)

HALBERT L. DUNN, M.D.

DOMINION BUREAU OF STATISTICS

OTTAWA

1946





DOMINION BUREAU OF STATISTICS, OTTAWA, CANADA

Division of Vital Statistics

---

Dominion Statistician:  
Chief, Vital Statistics:

Herbert Marshall, O.B.E., B.A., F.S.S.  
J. T. Marshall.

---

21-7140

The material contained in this publication was prepared by Dr. Halbert L. Dunn, and at the request of the members of the Vital Statistics Council for Canada was presented at the afternoon Session of the Second Meeting of the Council in Ottawa on Friday, May 10th, 1946.

Material is reproduced in the Analytical Series of the Vital Statistics Division of the Dominion Bureau of Statistics at the request of the members of the Vital Statistics Council for Canada and delegates of other agencies of Government who were present at the meeting.

The Dominion Bureau of Statistics wishes to express its appreciation to Dr. Dunn for his courtesy in permitting publication of this material.

This edition has been revised at the request of Dr. Dunn.

Digitized by the Internet Archive  
in 2024 with funding from  
University of Toronto

<https://archive.org/details/31761119715886>

## RECORD LINKAGE

by

Halbert L. Dunn, M.D.  
Chief, Vital Statistics Division,  
Bureau of the Census,  
Washington, D.C.

### THE BOOK OF LIFE

Each person in the world creates a Book of Life. This Book starts with birth and ends with death. Its pages are made up of the records of the principal events in life. Record linkage is the name given to the process of assembling the pages of this Book into a volume.

The Book has many pages for some and is but a few pages in length for others. In the case of a stillbirth, the entire volume is but a single page.

The person retains the same identity throughout the Book. Except for advancing age, he is the same person. Thinking backwards he can remember the important pages of his Book even though he may have forgotten some of the words. To other persons, however, his identity must be proven. "Is the John Doe who enlists today in fact the same John Doe who was born eighteen years ago?"

Events of importance worth recording in the Book of Life are frequently put on record in different places since the person moves about the world throughout his lifetime. This makes it difficult to assemble this Book into a single compact volume. Yet, sometimes, it is necessary to examine all of an individual's important records simultaneously. No one would read a novel, the pages of which were not assembled. Just so, it is necessary at times to link the various important records of a person's life.

The two most important pages in the Book of Life are the first one and the last one. Consequently, in the process of record linkage the uniting of the fact-of-death with the fact-of-birth has been given a special name, "death clearance".

### THE IMPORTANCE OF ASSEMBLING THE BOOK OF LIFE

There are many uses for the important records of each person, brought together as a whole. At times, even now, such a collection is of sufficient value that it is made at considerable cost in time and money. Usually it is the individual who is made to do the work since he alone knows where his records are on file. It is much more difficult for any other person or organization to assemble the records of his life since no personal cross-index exists to lead one to all of a person's records. It is important to many people and organizations to be able to assemble this type of information easily and efficiently.

<sup>x</sup> On July 16, 1946 the Division of Vital Statistics was transferred from the Bureau of the Census to the United States Public Health Service, Federal Security Agency, Washington 25, D. C.

### IMPORTANCE TO THE INDIVIDUAL

Sooner or later most of us need to prove facts about ourselves. The most frequent facts are concerned with birth. Sometimes other facts are needed. Many of these are recorded in the vital records of marriage, divorce, adoption, legitimization, change of name, death and presumption of death. However, it is not infrequent that facts are required from records of other types than vital records. Such types of records are those made for social security, military purposes, insurance, payment of pensions, professional licences, hospital care, and a host of others.

At times it is necessary to prove that one is in truth the person to whom the documents refer.

After death, it becomes especially difficult for relatives to assemble even the most important pages of the Book of Life of their dead. Individuals must furnish proof before title to property is transferred or the payment of legitimate claims is made. Missing persons may be alive or dead.

### IMPORTANCE TO REGISTRARS OF VITAL RECORDS

No one has a greater stake in the Book of Life than the registrar.

At the present time, he has the first page of each volume. But, although he may also have other important pages under his custody, they are scattered on different shelves of his vault. Some may be in the offices of his fellow registrars.

The registrar's primary responsibility has always been -

- (1) to obtain completeness and accuracy of registration,
- (2) to preserve records,
- (3) to certify from records, and
- (4) to produce statistics from them.

The possibility of satisfying his basic responsibilities could be greatly reinforced if the registrar would take on the additional responsibility of binding the Books of Life into volumes. It is not necessary for him to actually and physically assemble the records on a particular individual and bind them into a volume. For all practical purposes, the end result will be achieved if he creates a Life Records Index indicating where all the most important records of an individual are filed.

The accuracy of vital records would be enhanced because of inconsistencies that would show up. The completeness of vital records would be improved because subsequent documents would show that previous records which should have been filed had not been placed on file. Certification would become more secure from fraud. For instance, birth records of dead people could not be certified for fraudulent purposes. Massive certification jobs for government, which of necessity are so often done without charge, could be handled more efficiently and less expensively through a check-off system. Statistical information would become more meaningful because it would be linked to other types of data.

It is not too rash to predict that if the registrars of the country would undertake to prepare and keep up to date a Life Records Index on all the people of the country and do the job systematically and efficiently, they would find themselves and their offices to be the focal point of all records concerning people throughout the country. This would probably be accomplished in a surprisingly few years because the need for such a record linkage service is very great. It should be achieved at a relatively small total cost because the mechanism of the task is a very simple one, and, in performing this service, registrars would find that they were doing a particularly fine job in carrying out their primary responsibilities of registration and statistics.

#### IMPORTANCE TO ORGANIZATION

Numerous national, provincial and local official organizations rely heavily on knowing certain chapters in the Book of Life of many persons. In order to carry out their assigned tasks, organizations must ask individuals to produce proof of who they are, where and when they were born, to whom they are married, whether they served in the military forces, and a hundred other questions. Throughout all of this, the organization official must keep in mind the possibility of fraud. "Is this person really John Doe?" "Is his record as recorded true or false?"

After an individual has died, it is particularly difficult for the organization official to tap the facts concerning the records of the deceased. Frequently he does not know whether or not the individual is dead. For example, certain insurance companies systematically send to all fifty-three registration areas in the United States the names of persons with whom they have lost contact and who are presumed to be dead. The companies want to pay insurance benefits if they are due. In addition, they want to clear their books.

To know the fact-of-death whenever or wherever it occurs is of importance to every organization, official or private, that maintains an "active" file on large numbers of individuals. For example, it is costing the United States government millions of dollars per year to maintain the millions of records of dead people in their active files. Every search for a particular record is complicated and made more costly because the files contain "dead" records. Space costs are reflected in higher rentals and upkeep.

Another reason organizations have an interest in record linkage is that it will help them obtain more meaningful quantitative knowledge about their own programmes. Most organizations dealing with individuals produce some type of administrative statistics of the individuals served by them. It would greatly enhance the significance of such statistics if they could be linked to other facts about the same individuals, such as, "What sort of jobs do they hold?" "How many children do they have?" "What sort of illness do they suffer from?" "What kind of social environment do they live in?"

#### BINDING THE BOOKS OF LIFE INTO A SINGLE VOLUME

There are many ways of binding the Books of Life into volumes. Most of the registration systems in Europe accomplish this end by a central national file. Such systems are reinforced by constant referral to this file through the exercise of police powers. In general, all such systems will find disfavour in Canada and the United States.

Several years ago Canada was forced, by the passage of legislation on family allowances, to find an economical and efficient way to link all the vital records of an individual. Annual payments of 250 million dollars required up-to-the-minute and certain proof of the ages and birth order of all children under 16 years of age. It was decided that all customary certification methods were too costly, too slow, and too open to fraud. The system as worked out in Canada has proved to be simple and relatively inexpensive. IT HAS WORKED FROM THE START. It has kept vital records in their proper place, i.e., under the control of public health and statistical agencies. In the near future, it will probably be expanded to include older ages.

The elements of the system are:

(1) The Dominion Bureau of Statistics obtains microfilm copies of all vital records; births, deaths, marriages, divorces, adoptions, immigrations and emigrations.

(2) It then produces a uniform name index punch card for all such records. The index so produced is decentralized by duplicated cards or by printed lists to the province of birth, regardless of what province a particular record is filed in. In this manner a printed, ledger-type of Life Records Index is created for each province from the birth certificate. Each punch card is presented in this Index as a single printed line of type.

(3) Massive certification jobs for governmental purposes are done by check-off against this index in the province of birth.

(4) A statistical card is punched by the Dominion Bureau of Statistics at the same time as the name index card is punched.

(5) The Dominion Bureau of Statistics codes and tabulates all vital statistics, and publishes the national data. Detailed provincial statistics are turned over to the provinces for their publication and exploitation.

(6) The control of this joint federal-provincial vital records-vital statistics system is under a Council of Vital Statistics made up of the provincial registrars, the Dominion Statistician, the Director of Vital Statistics and the Director of the Census, Divisions of the Dominion Bureau of Statistics.

(7) The use of a birth card is being actively promoted throughout all Canada so that the person's identity number (birth card number) can be absorbed in all official records and thus simplify the posting of facts to the Life Records Index.

Canada has thus gone a long way toward producing a solution of this problem for the ages under 20 because of the legislation on family allowances. In addition to the great advance which has been made in linking the records of families having children under this age, Canada is now facing problems involved in creating a nation-wide prompt clearance of the fact of death.

## DEATH CLEARANCE

While this is but a single step in the whole process of obtaining a "record linkage", it is a most important step. There is so much demand for death clearance that, whatever it costs, the earnings should pay the costs of undertaking the task on a nation-wide uniform basis.

The principal market for this national death clearance system comes from those insurance companies and social organizations and institutions, both governmental and private, which either pay out money upon the death of the individual or which have obligations that are cancelled at the death of the individual. In the aggregate, the market for this type of service is enormous. It is a multiple market, for the fact of death on one individual is needed by various organizations. Ultimately an average of five to ten purchase orders for such information might be posted against the birth numerical index of each individual for a report of the fact of death whenever the death occurs. Since the deaths of older persons would involve a high percentage of unregistered births, it would probably be economical to handle such records on the basis of a systematic search against provincial death indexes.

The generalization of a record linkage system to all persons in the country depends primarily on three things:

(1) An efficient Life Records Index to the important records of an individual. The Life Records Index should be located in the province of birth and must lead to the individual's vital records wherever they might have been placed on file. This cross index should be arranged in birth certificate number order rather than in alphabetical name order.

(2) An efficient and prompt interprovincial exchange of essential facts which need to be posted to the Life Records Index. This involves as a minimum the exchange of facts identifying and locating the certificates of marriage, divorce, annulment, adoption, change of name, legitimization and death, whenever they are placed on file in a province other than the province of birth.

(3) The promotion of the widespread use of the Birth Card. This is the key to efficient record linkage. If governmental organizations, both federal and provincial, absorb the birth certificate number into their own records and require that the individual produce it before they obtain services - Services Which They Need - people are going to carry their birth card with them wherever they may go. If the birth certificate number becomes a part of every type of record it will greatly simplify posting the Life Records Index. The establishment of a nation-wide system of record linkage for all persons in the country will become an invaluable adjunct to the administration of health and welfare organizations and at the same time produce coordinated statistical knowledge of great value. With the birth certificate number as the binding of the Book of Life and the Birth Card as a device to facilitate the posting to the Life Records Index, all the records on an individual will eventually become linked together. Ultimately, the birth certificate number should be requested as an item in the national decennial census. In this way the wealth of information produced by the Census will be linked to the vital records recorded in the Life Records Index.





(3) L'UTILISATION GENERALE DE LA CHATTE DE NAISSANCE. C'est la clé d'une liaison efficace des archivistes. Si les organismes administratifs, tant fédéraux que provinciaux, portent à leurs propres dossier le numéro du certificat de naissance et qu'ils exigent que la personne le produise avant d'obtenir des services - SERVICES DON'T HELL A BESSON - les gens pourront leur carte de services sur eux, où qu'ils aillent. Si le certificat de naissance devient une partie de chaque genre de dossier, il simplifiera grandement la mise à jour de l'index des archivistes démographiques. La création d'un système national de liaison des archivistes pour toute la population du pays deviendra un auxiliaire précieux dans l'administration des organismes de santé et de bienfaisance; elle sera nature en même temps une science statistique uniforme de grande valeur. Le numéro du certificat de naissance jouant le rôle de la relâche dans le livre de vie et la carte de naissance celle d'expédient toutes les pièces du dossier d'une personne se trouvent ensemble dans l'objet d'une naissance lors du recensement national décentral. De cette façon, l'absence de renseignements produits par le recensement servira à établir les pièces du dossier d'une personne se trouvant ensemble dans l'index des archivistes démographiques.

(2) UN RECHERCHER PROVIGIALE RAPIDE ET EFFICACE DES FAITS ESSENTIELS qui

(1) UN INDEX DEMOGRAPHIQUE EFFICACE DONANT ACCÈS AUX PIÈCES IMPORTANTES DU DOSSIER D'UNE PERSONNE. L'index des archivées démontre les techniques de travail à être conseillée dans la pratique de la naisissance et conduire aux archivées déposées. Cet index recoupe de l'ordre de dépôt que dans l'ordre numérique des graphiques de la personne, quel que soit l'endroit où celles-ci ont été du certificat de naissance placé dans l'ordre alphabétique nominaux.

(1) UN INDEX DEMOGRAPHIQUE EFFICACE DONANT ACCES AUX PIÈCES IMPORTANTES DU

La clientèle principale de ce système national de radiation, mais c'est une phase très importante. La radiation par décès est un renseignement souvent demandé que, peu importe le coût, les avantages qu'il offre devraient composer des compagnies d'assurance et des institutions publiques et privées qui veulent ou votent leurs obligations césser à la mort d'une personne. Dans l'ensemble, il existe un marché énorme pour un tel service. C'est un marché multiple, car la mort d'une personne est un fait qui doit être connu d'une toute d'organismes. En définitive, en regard de l'index numérique de la mort de chaque individu il peut y avoir de très grandes demandes de radiation de chaque individu. Du fait d'un pourcentage plus élevé de naissances non enregistrées dans le cas des décès de personnes âgées, il serait probablement économique dans le cas des recherches systématiques dans la mort des déces des provinces.



Il y a bien des ragons de reunitr en un seul volume le livre de vie. La plupart des systèmes d'ergonomie Y parviennent grâce à un dossier central des systèmes d'ergonomie Y parviennent grâce à un dossier central national. Ces systèmes sont renforcés par une référence constante à ce dossier de la part des pouvoirs de surveillance. En général, les systèmes de ce genre servent tout mal accueillis au Canada comme aux Etats-Unis.

## ASSÉMBLAGE DU LIVRE DE VIE EN UN SEUL VOLUME

Nombre d'organismes officiels, natiōnaux, provinciaux et municipaux, s'attachent particulièrement à connaître certaines caractéristiques du livre de bien des personnes. Dans l'accompagnement de leur tache, il s'agit souvent de faire partie des particuliers qui l'ont fait, ou de servir de milieu et un autre sont mariés, s'ils ont fait ou non du service militaire et la possibilité de points. Le représentant de l'organisme ne doit jamais perdre de vue la possibilité de fraude. «Cet homme est-il bien Jean-Baptiste?». «Son dossier est-il vrai ou faux?».

Après la mort d'une personne, il est particulièrement difficile au représentant de l'organisme d'obtenir les faits connenus dans son dossier. Il ignore même si un individu est mort. Par exemple, certaines compagnies assurent des envoient systématiquement aux compagnies d'assurance certains documents d'assurance États-Unis, le nom des personnes avec lesquelles elles ont perdu contact et qui sont presque toutes mortes. Les compagnies désirent vérifier des bénéfices si il y a lieu et elles veulent aussi fermes leurs livres.

## IMPORTRANCE POUR LES ORGANISMES

Il n'est pas trop osé de prédire que si les régistries du pays entrent dans une manière systématique et efficace, de préparer et de maintenir à jour un index des archives démographiques de toute la population du pays, il suffit de faire établir, dans chaque état, un centre de toutes les archives concernant les habitan ts du pays. Il est surprenant comme le travail pourrait être accompli en peu d'années, car le besoin d'un service parfait de liaison des archives est très grand. Le court travail sera tout relativement facile puisque le mécanisme nécessaire à la tâche est très simple. Un rendant ce service, les registres constatent qu'ils font un travail magnifique dans l'accompagnement de leurs fonctions publiques.

(1) d'effectuer un enregistrement complet et exact,  
(2) de conserver les archives,  
(3) de donner des certificats d'après les archives, et  
(4) d'y puiser des statistiques.

La première fonction du registraire a toujours été -

Autre élément, il possède la première page de chaque volume. D'autres pages importantes sont peut-être sous sa garde, mais elles sont éparpillées sur différentes rayons de sa volute. Certaines pages peuvent se trouver dans les bureaux de ses collègues.

Null n'est plus intéressé au livre de vie que le registrateur.

IMPROVING FOUR LBS REGISTRARIES DIS ARCHIVES DEMOGRAPHIQUES

Après La mort, il devient partiellement difficile aux parents de renoncer à une fois plus importantes du livre de vie de la personne décédée. Ils doivent pourtant la prêve avant que les titres de propriété soient transférés ou que le patient déclare les réclamations légales soit effectuée. Les personnes dispersées peuvent être vivantes ou mortes.

Une personne mentionne dans les documents. La personne est quelqu'un appelle à prouver qu'elle est bien la

colliéger avec facilité et efficacité les renseignements de ce genre. Il importe néanmoins à beaucoup de gens de faire des personnes de pouvoir d'index personnel recoupe donnant accès à toutes les pièces du dossier d'une personne ou à un organisme de rentrée le dossier de sa vie puisqu'il existe pas de gardes les pièces de son dossier. Il est beaucoup plus difficile à une autre personne est capable de faire le travail lui-même puisqu'il est le seul à savoir où au, on n'hésite pas à le faire au prix de beaucoup de temps et d'argent. D'ordinaire, plies fins. Parfois, surtout de nos jours, cet assemblage revêt une telle valeur que, dans la méthode de liaison des archives, les archives importantes de chaque personne servent à une multitudinaires, les archives importantes de chaque personne servent à une multitudinaires.

## IMPORTRANCE DE COLLIGER LE LIVRE DE VIE

Les deux pages les plus importantes du livre sont la première et la dernière. C'est pour quoi, dans la méthode de liaison des archives, le racord entre le fait de la mort et celui de la naissance est des plus spéciaux: "radiation par deces". Les événements importants qui méritent d'être inscrits au livre de vie sont souvent enregistrés à différents endroits, car une personne se déplace durant sa vie. Il est donc difficile de faire du livre un seul volume compact. Pour cette raison, il est parfois nécessaire de rouvrir toutes les pièces importantes d'une même personne. Personne ne connaît un roman dont les pages seraient éparpillées. Il faut parfois examiner simultanément toutes les pièces importantes du dossier, soit souvent en deux parties à différentes endroits. Les événements importants qui méritent d'être inscrits au livre de vie sont rarement toutes les pièces séparées. Pour cette raison, il est parfois nécessaire de rouvrir toutes les pièces importantes du dossier de la vie d'une personne.

La personne conserve la même identité d'un bout à l'autre du livre. Elle rapporte en arrière, elle peut se rappeler les pages importantes de son livre même si elle en a oublié certains mots. A d'autres personnes, son identité doit être prouvée. "Jean-Baptiste enroulé aujourd'hui est-il le même Jean-Baptiste né il y a vingt-cinq ans?". Si elle se rappelle les pages importantes de son livre même si elle en a oublié certains mots, alors elle n'en reste pas moins la même personne. Si elle se rappelle, mais pas moins la même personne. Dans le cas d'un enfant mort-né, une seule page constitue tout le volume.

Le livre de la vie de certaines personnes compte de nombreuses pages tandis que celui d'autres n'en contient que quelques-unes. Dans le cas d'un enfant mort-né, une seule page constitue tout le volume. Dans le cas d'un enfant mort-né, une seule page constitue tout le volume.

Toute personne en ce monde compose un livre de vie. Ce livre commence à sa naissance et s'achève à sa mort. Les pages du livre sont formées d'un dossier des principales événements de sa vie. La méthode par laquelle les pages de ce livre sont rentrées en volume s'appelle: la liaison des archives.

Le livre de la vie de certaines personnes compte de nombreuses pages tandis que celui d'autres n'en contient que quelques-unes. Dans le cas d'un enfant mort-né, une seule page constitue tout le volume.

La liaison des archives est une méthode de renseignement, D.O.G. Bureau du recensement, Washington, D.C.

Cher, Division des Statistiques Vitales, Halbert L. Dunn, M.D., par



DIVISION DES STATISTIQUES VITTALES

BUREAU FEDERAL DE LA STATISTIQUE, OTTAWA, CANADA

---

STATISTIQUES VITTALES:	Herbert Marshall, O.B.B., B.A., F.S.S.	J. T. Marshall.	Chief, STATISTIQUES VITTALES:
------------------------	--	-----------------	-------------------------------

---

Le texte de cette publication a été préparé par le Dr Halbert L. Dunn et, à la demande des membres du Conseil canadien des Statistiques vittales, il a été présenté à Ottawa le 10 mai 1946, à la séance de l'après-midi de la deuxième réunion du Conseil.

Le texte est publié dans la Série analytique de la Branche des statistiques vittales du Bureau fédéral de la Statistique à la demande des organismes du gouvernement qui assistent à la réunion.

Le Bureau fédéral de la Statistique désire remercier vivement le Dr Dunn de la courtoisie dont il a fait preuve en permettant la publication de ce texte.

La présente édition a été revisée à la demande du Dr Dunn.

卷之三

1920-1921

卷之三十一

## THEORY OF THE CLOUDS OF THE MOON

THE BOSTONIAN

1946

OTTAWA

BUREAU FEDERAL DE LA STATISTIQUE

HALBERT L. DUNN, M.D.

(Edition Revisee)

LA LIAISON DES ARCHIVES

RAPPORT ANALYTIQUE NO. 2

STATISTIQUES VITALES

CANADA



